REMARKS/ARGUMENTS

Favorable reconsideration of this application, in light of the following discussion, is respectfully requested.

Claims 1-20 are pending.

In the Official Action, Claims 1-20 were rejected under 35 U.S.C. § 102(b) as being anticipated by Hogan (U.S. Patent No. 6,101,158).

Briefly recapitulating, Claim 1 is directed to a disc recording and reproducing device, comprising a resuming section which resumes, after writing of record data on a disc is interrupted, writing of the record data, which is continuous to the record data of which writing is interrupted, at an additional data region just after an end of a recorded data region that is a region of the record data already recorded on the disc. The device also includes a first reproduction synchronization signal output section which reproduces the record data recorded on the recorded data region, sequentially extracts ***a synchronization signal*** from the reproduced record data, and outputs a first reproduction synchronization signal with a frame having a predetermined length that is sequentially structured by the sequentially extracted synchronization signal. The device also includes a reliability judging section which only detects a frame having a period that is in accordance with a predetermined standard from the first reproduction synchronization signal, and outputs the frame as a reliability synchronization signal. The device also includes a synchronization signal phase retaining section which outputs, based on the frame contained in the reliability synchronization signal, a retained phase signal that retains a phase of the frame of the reliability synchronization signal, and a second reproduction synchronization signal output section which reproduces the record data recorded on the additional data region, sequentially extracts ***the synchronization signal*** from the reproduced record data, and outputs a second reproduction synchronization signal with a frame having a predetermined length that is sequentially structured by the

sequentially extracted synchronization signal. The device also includes a phase difference measuring section which measures a displacement of frames between the second reproduction synchronization signal and the retained phase signal, as a phase difference.

Hogan describes an optical storage device that includes a laser, a write clock generator and a read/write disc. The laser is modulated, and a readback signal is generated from laser light read back from the disc. The readback signal includes a first frequency component caused by the modulation of the laser and a second frequency component caused by information (e.g., data or a high frequency wobble) on the medium. The phase of the write clock is adjusted in accordance with a phase difference between the first and second frequency components. This adjustment allows new data to be written to the read/write disc without a phase discontinuity between the new data and data previously written to the disc.[1]

In particular, Hogan describes a conventional data recovery circuit 35 that recovers data from the readback signal RBK. The recovered data is sent to conventional circuitry (not shown) for demodulating the recovered data, arranging the demodulated data in error correction code ("ECC") blocks, and performing error correction on the ECC blocks. The error-corrected data is sent to the host.[2] A wobble detection circuit 44 performs clock recovery to derive a wobble clock WOBCLK from the readback signal RBK (clock recovery in general and a circuit 100 for performing the clock recovery are described in connection with FIGS. 7 and 8). The wobble clock WOBCLK has a frequency equal to the frequency of the high frequency 20 wobble and is phase-locked with edges in the wobble-induced frequency component of the readback signal RBK.[3] The beam-based frequency information may be provided by the RF laser modulation. The readback signal RBK contains a high frequency component caused by the RF modulation of the laser beam B. An RF detection circuit 46 performs clock recovery to derive a modulation clock RFCLK from the

[1] Hogan, Abstract.
[2] Hogan, col. 3, lines 57-63.
[3] Hogan, col. 4, lines 54-62.

readback signal RBK. The modulation clock RFCLK has a frequency equal to the RF clock frequency and is phase-locked with edges in the laser modulation-induced frequency component of the readback signal RBK.[4]

In an alternative embodiment, in certain situations, the high frequency wobble information might not be available. A read/write medium such as a write-once disk might not have the high frequency wobble 18. If the high frequency wobble information is not available, high frequency information may be derived instead from the data stored on the disc 10. A data detection circuit 50, which is included in the data recovery circuit 35, derives a data clock DCLK from the readback signal RBK. The data clock DCLK has a frequency equal to the channel bit frequency and is phase-locked with edges of the data in the readback signal RBK. The data clock DCLK is supplied to the phase-frequency detection circuit 48, which adjusts the write clock phase according to a phase difference between the data clock DCLK and the modulation clock RFCLK.[5]

FIG. 9 of Hogan shows the phase-frequency detection circuit 48 in greater detail. A phase-frequency detector 200 detects phase and frequency differences between a signal on its first input and a signal on its second input. A phase-frequency detector 200 such as the Motorola MC4344 or MC4044 may be used.[6] A first multiplexer 202 supplies either the wobble clock WOBCLK or the data clock DCLK to the first input of the phase-frequency detector 200. A second multiplexer 204 supplies either the modulation clock RFCLK or the write edge clock WEDCLK to the second input of the phase-frequency detector 200. Selection by the multiplexers 202 and 204 is controlled by a select signal MODE, which is supplied by the controller 22 and based upon conditions such as the mode of operation of the DVD drive 20. For example, the first multiplexer 202 will supply the data wobble clock WOBCLK to the first input of the frequency-phase comparator 200 and the second

[4] Hogan, col. 4, line 63 through col. 5, line 5.
[5] Hogan, col. 5, lines 21-36.
[6] Hogan, col. 6, lines 56-61.

multiplexer 204 will supply the write edge clock WEDCLK to the second input of the frequency-phase comparator during the insert-edit mode of operation.[7] An output of the phase-frequency detector 200 provides the control signal PHS that adjusts the phase of the modulation signal RF. The control signal PHS may be supplied directly to a voltage-controlled oscillator 39 of the RF generator 38.[8]

However, contrary to the Official Action, none of the clocks of Hogan are a signal with "a frame having a predetermined length that is sequentially structured by the sequentially extracted synchronization signal." Furthermore, none of the clock signals of Hogan correspond to Applicants' claimed second reproduction synchronization signal. Thus, the determining of a phase difference between the wobble clock and the modulation clock by Hogan is not equivalent to Applicants' claimed measuring a phase difference, which is a displacement of frames between the second reproduction synchronization signal and the retained phase signal, which in turn is based on the frame contained in the reliability synchronization signal, which in turn ***is based on the first reproduction synchronization signal.*** That is, in Applicants' claimed invention, the first and second reproduction synchronization signals are based on the same original synchronization signal, albeit recorded in different regions. Hogan does not disclose or suggest such a construct.

With Applicants' invention it is possible to measure displacement of frames which are longer than a period of the write clock signal. This is not possible with Hogan because the device of Hogan measures a displacement between a first and second frequency which is shorter than a period of the write clock signal. In the present invention, the first reproduction signal is generated based on the reproduced record data on the recorded data region, and the second reproduction signal is based on the reproduced recorded data on the additional data

[7] Hogan, col. 6, line 62 through col. 7, line 9.
[8] Hogan, col. 7, lines 10-14.

region. As noted above, the first frequency component of Hogan is caused by the modulation of the laser, and is not based on reproduced record data on a recorded data region.

MPEP § 2131 notes that "[a] claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). See also MPEP § 2131.02. "The identical invention must be shown in as complete detail as is contained in the ... claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). Because Hogan does not disclose or suggest all the features recited in Claim 1, Hogan does not anticipate the invention recited in Claim 1, and all claims depending therefrom. For similar reasons, Hogan does not disclose or suggest all the features recited in independent Claims 8 and 15, Hogan does not anticipate the invention recited in independent Claims 8 and 15, and all claims depending therefrom.

Accordingly, in light of the previous discussion, Applicants respectfully submit that the present application is in condition for allowance and respectfully request an early and favorable action to that effect.

Respectfully submitted,

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